DOCUMENT RESUME

ED 246 600 EC 162 808

AUTHOR Sutaria, Saroj
TITLE Multisensory Approach to the Teaching of Reading to Learning Disabled Students: A Review of Research and a Case Study.
PUB DATE 30 Jul 82
NOTE 19p.; Paper presented at the Annual World Congress on Reading (9th, Dublin, Ireland, July 30, 1982).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Descriptive (141)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Elementary Education; *Learning Disabilities; *Multisensory Learning; *Reading Improvement; *Reading Instruction; Research Methodology
IDENTIFIERS *Fernald Method

ABSTRACT

The paper reports on multisensory approaches to reading instruction of learning disabled children. G. Fernald's "tracing" method, also known as the V-A-K-T method, is described and research questioning its effectiveness is cited. Next, the Adapted Fernald Technique (AFT) which requires the student to write, illustrate, read and reread his/her own typed stories daily, is described. A modification of the AFT is reported in which a fifth grade hyperactive child made notable gains in 5 weeks in reading, spelling, and story writing. The student's motivation for reading also increased. The applicability of multisensory approaches is considered. (CL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.
Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

ED246600

MULTISENSORY APPROACH TO THE TEACHING OF READING TO LEARNING DISABLED STUDENTS: A REVIEW OF RESEARCH AND A CASE STUDY

BY

SAROJ SUTARIA

NINTH WORLD CONGRESS ON READING

DUBLIN, IRELAND

July 30, 1982

11:00 - 12:00

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Saroj Sutaria

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

EC162888

Educational Research Centre, St. Patrick's College, Session # 124, Room 9

MULTISENSORY APPROACH TO THE TEACHING OF READING TO LEARNING DISABLED STUDENTS: A REVIEW OF RESEARCH AND A CASE STUDY

INTRODUCTION

Literature in the area of reading for the learning disabled cites, without an exception, the use of multisensory approaches as an alternative to the more traditional methods in remediation. Most uses of these methods by their developers have been made in clinical settings over extended periods of time and they have reported phenomenal positive results accruing to the clients thus served. Other researchers who have attempted to prove or disprove these claims have reported mixed results. Still others have attempted to modify the procedures involved in implementation of the methods to accommodate them to the artificiality of the testing conditions. Again, these attempts have produced mixed results.

It is my intent to first briefly describe the one method which is a precursor of all such methods and which appears to have generated as much enthusiasm as doubt as to its merit. I refer to Grace Fernald's "tracing" method, also popularly known as the V-A-K-T (Fernald, 1943). Next, I will report on research findings as to the effectiveness of "tracing" methods in general. A little-known method called the Adapted-Fernald-Technique (Stich, 1976) will be next described. Finally, I will report on a modified A-F-T which was used with a learning disabled youngster in a summer program with which I have been associated as a university faculty coordinator these past several years.

THE FERNALD "TRACING" METHOD (1943)

Originally designed for use with extremely severe disabled readers, the method involves four stages:

In Stage one, the child learns new words by tracing them. From the very beginning, stress is on helping the child to creatively express himself in writing whatever he wants to say. Any word that he does not know how to write is written for him by the teacher with a crayola on paper in chalkboard size script or print which the child traces with one or two fingers and pronounces as he traces it. The tracing and the pronunciation continue as many times as needed for the child to form a mental imagery of the word so that he can first write the word from memory on scrap paper and next use it in his story. Within twenty-four hours the child's story is typed for him and he is encouraged to read it in print. The newly learned word is placed in a card file. Fernald cautions that finger contact in tracing is essential, that the newly learned word should never be copied nor erased for correction, that the word should always be written as a unit, and that it should be used is context.

In Stage two, tracing is eliminated. The child merely looks at the word that is written for him, he says it to himself and as he writes it from memory he pronounces it. As in Stage one, the child selects the word he wants to use in his story. The remaining steps are as in Stage one.

Stage three repeats the steps in Stage two except that the child looks at the printed word rather than having it written for him. In the final Stage, the child recognizes new words from their familiarity to previously learned ones. Stage three launches the child into reading books of interest to him and Stage four further fosters this interest.

THE EFFECTIVENESS OF THE "TRACING" METHOD

Fernald in her classic text (1943) documented phenomenal success with her tracing method with severely reading disabled students. Since it would be natural for an author to report success with his/her own method,

it is important to look for unbiased opinion and/or evidence elsewhere.

Foster (1941), after concluding in her own experiment, that tracing may distract rather than facilitate adult learners, nonetheless felt that the Fernald method had a strong motivating power and that to a greatly discouraged child, it offered new hope because it precluded any chance of incorrect responses.

Bond and Tinker (1957), inquiring into the factors which appeared responsible for the method's success, identified the following:

1. "(t)he child learns effectively the left-to-right sequences of perception by his simultaneous tracing-sounding and writing-sounding of words";
2. "(t)he visual structure of the word is associated with appropriate sounding of the pronounceable units of the word";
3. "(s)kills in phonics are learned without having them taught formally";
4. "(t)he very nature of the program leads to skill in syllabication";
5. "...the child is strongly motivated by working with materials in which he is much interested". (p.418)

Ofman and Shaevitz (1963) noted that the key to the success of the Fernald method lay in its kinesthetic element which forces the child to attend to the task.

McCarthy and Oliver (1965) found mention by reading authorities that the success of the Fernald method rested on "...(a) concentration on the task at hand, (b) individual instruction, (c) novelty of approach, and (d) reinforcement in experiencing immediate success." (p.419)

Nienstad (1968), who sucessfully used the method with remedial as well as average and honor students, from grades one through college, expressed confidence in it because it enabled students to "...improve their auditory discrimination, handwriting, spelling, word attack skills including both phonics and syllabication, and phrasing," all in just one activity. (p.52)

Charuk (1973) concluded in his doctoral study that remediation of reading disabilities was greatly enhanced when it was effected through the use of visual-haptic or multisensory training.

Miccinati (1979) concurred with Bond and Tinker (1957) in stating that tracing imposed a sequential order to learning. She suggested that the child using the Fernald method was probably progressing from "... a form of chaos or disorder in learning to a form of order." (p. 142) In addition to helping the child to recognize the invariant features of letters and words, the words themselves became reinforcing because they were self-selected and therefore of high interest and were used in self-dictated stories.

All of the above statements are ofcourse subjective opinions and need to be weighed against more objective evidence. Not many controlled studies were located in the search for such evidence. Those which were, soon made clear that the studies did not duplicate Fernald's method but rather attempted to assess the effectiveness of "tracing" in recall. Following is a summary chart of experimental studies conducted over a span of 30+ years. Of the seven studies, only one (Ofman and Shaevitz, 1963) showed tracing to be superior to other methods. However, even in this single instance, no difference was noted between "eye tracing" and "finger tracing". Another study (Charuk, 1973) found visual-haptic training more effective than haptic-visual. Two studies (Foster, 1941, and Baker and Raskin, 1973) found visual a more significant modality, one (Silberberg, Iverson and Goins, 1973) found the auditory modality thus, while one (Vandever and Neville, 1972-73) found both visual and auditory learning superior to tracing. Finally, one study (Roberts and Coleman, 1958) found that tracing was helpful in learning only when the visual perceptual acuity was poor.

The research evidence appears overwhelmingly against the "tracing" method and one would be tempted to conclude that it would not

EXPERIMENTAL STUDIES USING THE "TRACING" METHOD

AUTHORS	MODALITY EMPHASIS	POPULATION	LENGTH OF EXPERIMENT	RESULTS
Foster (1941)	tracing vs look-say	80 college students enrolled in a Psych. class 3 groups of 40, 20 and 20	immediate word recognition of nonsense symbols	look-say favored over tracing .01 (2) .05 (3)
Roberts and Coleman (1958)	visual vs visual-kinesthetic	56 boys: 27 E -- average of 2.9 grade reading retardation 29 C	cvc nonsense syllables written on 3x4 cards	E less efficient in visual --.01 E -- VK learning sig. .05
Ofman and Shaevitz (1963)	eye tracing vs finger tracing vs normal reading	30 retarded readers mean age 13.5	immediate writing of word	both eye tracing and finger tracing more effective than normal --.05 no diff'ce bet. the two
Vandever and Neville (1972-73)	tracing vs visual vs auditory	40 first graders: 20 E, 20 C, each comprising half good and half poor decoders	immediate recall	visual and aud. favored over tracing --.05 no diff'ce bet. vis. and aud.
Silberberg, Iversen and Goins (1973)	kinesthetic vs visual-sight vs auditory-phonic vs multisensory	134 third graders reading at least one grade level below	one year; follow-up six months later reading achievement	aud.-phonic favored over others; gains 'washed-out' six mon. later
Baker and Raskin (1973)	visual vs visual and touch	72 K-2 graders considered high-risk or LD	immediate letter form recognition	vision found superior to touch
Charuk (1973)	visual-haptic vs haptic-visual	72 fourth graders reading one to one-and one-half grade below level	6 weeks: vocabulary, comprehension, phonics, syllabication	visual-haptic sig, more effec. than haptic-visua

be worth one's while to incorporate that modality in teaching when it does not appear to produce more efficient learning.

A closer study of each of the experiments show that such a conclusion may be arrived at erroneously. For one, with the exception of Silberberg et al's study which was a year long and Charuk's which was six weeks long, the experiments tested immediate recall and involved no follow-up. Second, five experiments used contrived or nonsense symbols rather than meaningful words. Charuk's study used Greek, Russian, and American Indian alphabets which would be unfamiliar to the samples being trained. Third, and finally, while Silberberg et al found higher reading achievement among "auditory" groups at the end of the experimental year, a follow-up six months later found the gains "washed-out".

It is my considered opinion that the effectiveness of the Fernald approach has neither been proven nor disproven. I concur with Myers (1978) that experimental studies need to be better designed. Further, I believe that experiments should involve "real" school learning situations, that the methods should be used as they were designed for use, and that the real test of a method's efficacy can be made only from long-term studies.

I will now outline the specific features of the A-F-T (Stich, 1976) before pointing out its modifications and their implementation in in a summer program for children with learning disabilities.

THE ADAPTED-FERNALD-TECHNIQUE

The A-F-T was developed in 1976 at the Northern Tier Learning and Diagnostic Center at the Mansfield State University in Mansfield, Pennsylvania, to meet the remedial reading needs of students experiencing serious reading difficulties. Described as a "practical" approach, its author, Dr. Stich, stated in the Manual that through its use, which required the child to write, illustrate, read and reread his own typed stories daily, the A-F-T brought the child "...to the point where the

understanding of phonics and the order and sequence of sounds in words finally (became) apparent to him." (p.100) This, in turn, helped him "...to perceive the order within spoken and written language." (p. 101) Stress was on overlearning to the point of proficiency, and anywhere from six to eights months to several years may be taken to accomplish this objective.

Stich believes that the A-F-T's success is due to attention given to the following features in implementing the technique:

1. "The child will read and re-read his accumulated stories daily.
2. The child, himself, will write the stories.
3. He will use his own language and experience for his material.
4. He will write each day.
5. The child will use his voice out loud as he traces and writes new words.
6. The child will voice syllable-sounds, rather than individual letter names, as he traces and writes.
7. Two five-minute mini-reviews will be held daily, to reinforce new learnings." (p. 104)

The tracing itself incorporates the following steps:

1. "The child will ask for the word.
2. The teacher will write the word on a card with black crayon.
3. The teacher will pronounce the word, then demonstrate its parts with her hands, syllable by syllable, two times.
4. The child will pronounce the word syllable by syllable, two times.
5. The child will trace the word two times with his dominant index finger, while pronouncing the word out loud, syllable by syllable.
6. The child will write the word two times on scrap paper, while pronouncing each syllable out loud, checking after each time for accuracy.
7. The child will write the word in his story, as he pronounces the word aloud, syllable by syllable." (p. 115)

A typical lesson would involve word card review, story reading, story writing, new story review, new word review, word-card filing, story illustration, and mini-reviews. (Stich, 1976)

While Stich claims the Adapted-Fernald Technique's effectiveness with the seriously reading disabled, he has not documented any case studies in support of his claims.

MODIFIED ADAPTED-FERNALD TECHNIQUE AND ITS USE WITH A LEARNING DISABLED STUDENT

It was in the summer of 1977 that H.K. came to our attention. He was 11 years ten months of age and had just completed the fifth grade. His background history revealed that he was born in 1965, one of three children, who, at the age of two, was observed to have a very short attention span which was attributed to hyperactivity. At age five, he suffered from petite mal seizures but received no medication until age seven. His problems in reading became apparent in late second grade. He appeared to especially have difficulty in blending of sounds and syllables and in comprehension. Naturally concerned, his parents asked for help for him at school but none was given until H.K. reached the fourth grade at which time half-hour tutorial sessions twice a week were arranged for him. Feeling that the tutorial sessions were not enough and realizing that their son would receive no additional help in school, the parents asked for a summer school referral. The school obligingly supplied the name of our summer program but for reasons unknown did not recommend it for H.K. The parents, to their later regret, took their advice. The tutorial sessions at school continued through the fifth grade at the previous year's level and at the end of that year, the parents on their own opted to enroll H.K. in the summer program.

The summer program has been a joint venture between a local parent group and a state university department of special education. Open to school age children experiencing learning difficulties and in

need of professional assistance for remediation or maintenance of academic skills, the program is staffed by graduate student teachers under the supervision of the program's director and coordinator.

H.K.'s parents expressed their concern at his lack of progress in reading and their frustrations at his school's failure to meet his needs. The summer school teacher to whom H.K. was assigned duly noted the parents' concerns and decided to use the Adapted-Fernald Technique with him. The previous summer she had taken a workshop offered by Dr. Stich on the technique. She was convinced that the A-F-T would suit H.K.'s needs and interests, the latter because he was discovered to have a special talent for drawing. She was thus eager to implement the technique. However, she could not ignore the other six students also assigned to her. Their assessment data revealed general underachievement in reading although their problems were not as serious as H.K.'s. She decided, therefore, to use the A-F-T with all the students but to modify it to some extent to make its implementation more manageable.

The modified A-F-T comprised the following features:

1. The technique was used at once with all seven students enrolled in the class, instead of the 2 to 5 per group as recommended.
2. The teacher moved freely from student to student as help was asked for, instead of sitting at a table within easy reach of all students at the table.
3. The teacher spent no more than thirty to thirty-five minutes four days a week on the technique, instead of an hour to an hour and half every day.
4. The teacher used six of the seven steps recommended for word-tracing. The step requiring writing the word twice on scratch paper while pronouncing each syllable was used only when needed.
5. The teacher used a standard instead of a primary typewriter to type the students' stories.

6. The teacher supplemented the reading instruction with other materials.

In brief, the following basic procedures were used to implement the modified A-F-T with H.K.:

1. H.K. was required to write a new story each reading period. Any word that he did not know how to spell was written for him on an index card with a black crayon. The teacher pronounced the word, syllable by syllable, two times. Then he traced the word with his dominant index finger two times and pronounced the word, syllable by syllable, as he traced it. The word was next used in the story and as he wrote it he once more pronounced it syllable by syllable.
2. The hand-written story was typed by the teacher using a standard typewriter for the following reading period.
3. The words on index cards were first reviewed and then the typed story was read.
4. Finally, H.K. drew a picture to represent the theme of the story.

In conjunction with the above method, regular use was made of the SRA Reading Program and the Reader's Digest Reading Skills Builders, both of which focussed on comprehension and interpretive skills. In addition, selected library books on topics of interest were made available in the classroom to encourage independent reading and writing of book reports to earn extra points. The daily schedule also included close monitoring and rewarding of appropriate work habits and classroom behavior.

RESULTS

At the start of the six week summer program, pre-assessment data using Mann and Suiter Reading Inventory revealed H.K. to experience frustration at 4.5 G. E. level while his instructional level was determined to be at 3.5 G. E. and independent reading at 2.5 G. E. level. On the Mann-Suiter Spelling Inventory, H. K. achieved at the instructional level of 4.0 and evidenced frustration at 5.0 level. The Mann-Suiter Diagnostic

Inventory results revealed adequate performance in auditory, visual and language areas and special strengths in motor areas.

Post-assessment results using the Woodcock Reading Mastery Scales showed the following:

Word Identification	4.4
Word Attack	6.7
Word Comprehension	4.9
Passage Comprehension	5.9
Total Reading	5.2

In six weeks, H.K. had made notable gains. To enumerate,

1. he added 40 new words to his reading and spelling vocabulary;
2. wrote increasingly longer stories, some of which even contained a message;
3. read six stories in the Reader's Digest Skill Builders Series and answered comprehension questions with 75 percent accuracy;
4. read six stories in the SRA Reading Program at 3-C level;
5. read four library books and answered comprehension questions with at least 80 percent accuracy.

In brief, H.K.'s success in reading was phenomenal. The language experience focus in this multisensory method was rewarding and motivating for this twelve-year old who previously had found little pleasure in reading.

The following summer when H.K. returned to the program, pre-assessment with the Woodcock placed him as follows:

Word Identification	5.7
Word Attack	5.1
Word Comprehension	8.0
Passage Comprehension	7.2
Total Reading	5.8

In other words, with the exception of word attack, H.K.'s reading progress continued.

DISCUSSION

Reading disability is perhaps the single most important cause of school failure (Strand in Wallace and Kauffman, 1978). Lerner (1981) describes reading as a tool which is basic to all content area studies. To experience success in reading, one must have the ability to "make associations between the printed symbol, the auditory symbol and memory." (Johnson and Myklebust, 1967, p. 148) The National Advisory Committee on Handicapped Children estimated in 1969 that over eight million children of school age experienced reading difficulties. Among these are included many learning disabled youngsters whose problems in learning to read are legion.

Recently, reports of thousands of students graduating from high schools without the mastery of the basic skills are causing such pervasive concern that many states and/or school districts are adopting "back to basics" and "minimal competency testing" standards. An added concern is the lack of interest in reading or even of schooling on the part of these students. It is important, therefore, that teachers acknowledged these problems and assumed some responsibility in determining the "right" method for the child with whom traditional methods have failed.

Gearheart (1977) has stated that there is no single "right" method to use to teach all children. Similarly, the "tracing" method offers no panacea to the reading dilemma. However, if the method works for even a single child, as it did in the case reported here, it is worth using. It is far more important to ensure successful learning which is aimed at reaching the child's untapped potential than to persist in methods which for some students result in little more than failure and frustration with accompanying self concept problems.

In the case cited earlier, a statistical analysis was not conducted on the achievement differences because of the difference in

test instruments used at the pre- and post-treatment periods. However, one cannot but be impressed with the gains achieved by H.K. in reading in mere six weeks. Can the "tracing" method still be considered a big question mark because it was not statistically tested in the summer program? By the same token, how many of the "research" studies cited earlier truly implemented the "tracing" method as developed by Fernald?

I would submit that multisensory methods such as Fernald's and Stich's, even though originally designed for severely disabled readers and are intensive and time-consuming methods of remediation, nonetheless have a useful place in programs for learning disabled for selected clientele. As Charuk (1973) and Segel (1974) maintain, the haptic input provided in these methods compensates, reinforces and enriches visual and auditory perception so critical to reading, and remediation efforts are significantly enhanced when appropriately used. With suitable modifications and in combination with other supplementary materials, I further submit that multisensory methods offer viable alternatives in remediation of reading difficulties. In Baker and Raskin's (1973) words, let us not abandon or consider unimportant methods of multimodal learning simply because research studies have failed to support them.

In the final analysis, the success or failure of a remedial method depends on several factors, among them the child's idiosyncratic learning style. That, above all, must remain the central focus.

SUMMARY AND CONCLUSION

To briefly summarize the aforegone, Fernald's method and its efficacy studies were first presented. Next, an adaptation of the Fernald method by Dr. Stich was described. This was followed by a discussion of modifications made to Stich's technique and their implementation in a summer program with a learning disabled student.

H.K., a twelve year old, was assessed with the Mann-Suiter prior to training at 2.5 Independent level, 3.5 Instructional level and 4.5 Frustration level. Within six weeks, with the use of the modified Adapted-Fernald Technique and other supplementary reading materials, H.K., on post-assessment results, showed a total reading achievement score of 5.2 on the Woodcock. The following year pre-assessment results at the start of the program showed evidence of further reading gains. For this one youngster, the "tracing" method had proved effective because it capitalized on language experience stories and drawing.

In conclusion, a quote from Grace Fernald herself sums it up best:

> (M)ost cases of reading disability are due to blocking of the learning process by the use of limited, uniform methods of teaching. These methods, although they have been used successfully with the majority of children, make it impossible for certain children to learn because they interfere with the function of certain abilities that children possess.

(Fernald, 1943, pp. 175-176)

Thus, it is up to us teachers to discover those abilities and to teach from there.

REFERENCES

Baker, G. P. and Raskin, L. M. "Sensory Integration in the Learning Disabled". Journal of Learning Disabilities, 6 (December 1973), 645-649.

Bond, G. and Tinker, M. Reading Difficulties: Their Diagnosis and Correction. New York: Appleton-Century-Crofts, 1957, 416-418+.

Charuk, J. M. "The Effects of Visual-Haptic Training on Reading Achievement". Dissertation Abstracts, 34 Part 9 (1974), 5707A.

Fernald, G. Remedial Techniques in Basic School Subjects. New York: McGraw-Hill Book Co., 1943.

Forster, M. "Visual and Visual-Kinesthetic Learning in Reading Nonsense Syllables". Journal of Educational Psychology, 32 (Summer 1941), 453-458.

Gearheart, B. R. Learning Disabilities: Educational Strategies. St. Louis: The C. V. Mosby Co., 1977. (Second edition)

Johnson, D. J., and Myklebust, H. R. Learning Disabilities: Educational Principles and Practices. New York: Grune & Stratton, Inc., 1967.

Lerner, J. W. Learning Disabilities. Boston: Houghton Mifflin Co., 1981. (Third edition)

Mann, P. H. and Suiter, P. Handbook in Diagnostic Teaching: A Learning Disabilities Approach. Boston: Allyn & Bacon, Inc., 1974. (Abridged edition)

McCarthy, W. and Oliver, J. "Some Tactile-Kinesthetic Procedures for Teaching Reading to Slow Learning Children". Exceptional Children, 31 (April 1965), 419-421.

Miccinati, J. "The Fernald Technique: Modifications Increase the Probability of Success". Journal of Learning Disabilities, 12 (March 1979), 132-142.

Myers, C. A. "Reviewing the Literature on Fernald's Technique of Remedial Reading". The Reading Teacher, 31 (March 1978), 614-619.

Nienstad, S. "Group Use of the Fernald Technique". Education Digest, 33 (May 1968), 52-54.

Ofman, W. and Shaevitz, M. "Kinesthetic Method in Remedial Reading". Journal of Experimental Education, 31 (March 1963), 317-320.

Roberts, R. and Coleman, J. "Investigation of the Role of Visual and Kinesthetic Factors in Reading Failure". Journal of Educational Research, 51 (February 1958), 445-451.

Segel, R. "Improving Perception Through the Haptic Process". Academic Therapy, 9 (Summer 1974), 419-423+.

Shea, D. "The Case for the Kinesthetic Method". Grade Teacher, 74 (October 1956), 60+.

Silberberg, N. E., Iverson, I. and Goins, J. "Which Remedial Reading Method Works Best?" Journal of Learning Disabilities, 6 (November, 1973), 18-27.

Stich, T. F. et al. A Manual of Instructional Strategies for Children with Learning Problems. Mansfield, Pennsylvania: Mansfield State College, 1976. (Unpublished manuscript)

The National Advisory Committee on Handicapped Children. First Annual Report. Washington, D. C.: Office of Education, Department of Health, Education and Welfare, 1968.

Vanderer, T. R. and Neville, D. D. "The Effectiveness of Tracing For Good and Poor Decoders". Journal of Reading Behavior, 5 (Spring 1972-73), 119-125.

Wallace, G. and Kauffman, J. M. Teaching Children with Learning Problems. Columbus, Ohio: Charles E. Merrill Publishing Co., 1978. (Second edition)